

predetermined area (e.g., adjacent the friend's name). In response to the selection, user interface software **160** associates the name with a telephone number stored in data storage **150** and instructs processor **130** to dial the number. User interface software **160** can be configured to operate in a variety of user environments such as on a desktop computer or a public kiosk.

[0036] **FIGS. 2a-2c** illustrate cross-sectional views of active edge input device **120** in accordance with a preferred embodiment consistent with the present invention. As illustrated in **FIG. 1**, active edge input device **120** is a strip of material that extends along a border of display **110** and is responsive to touch or pressure. Active edge input device **120** is designed to provide "two-step" functionality. A first function is implemented at the first step when a first pressure or touch is applied to the input device (e.g., pressure applied by a human finger). A second function is implemented at the second step when a second pressure is applied to the same area on the input device (e.g., additional pressure applied by a human finger in the same location).

[0037] **FIG. 2a** illustrates a cross-sectional view of active edge input device **120** at rest. Active edge input device **120** includes a flexible strip **200** positioned adjacent a host device body surface **260**. Body surface **260** is a surface of a host device in which active edge user interface **100** is employed. For example, if the active edge user interface **100** is employed in a wireless communication device, then body surface **260** is a surface of the wireless communication device body.

[0038] Flexible strip **200** is an elastomer strip of material that includes an upper surface **205**, a lower surface **207** and one or more cavities **210**. Although an elastomer material is preferable, flexible strip **200** can be composed of any resilient material. Preferably, flexible strip **200** is a continuous strip of material that extends around at least one side of display **110**. However, flexible strip **200** may be sectioned (i.e., non-continuous) as appropriate in the user environment to satisfy design requirements.

[0039] Upper surface **205** is a surface of flexible strip **200** that is exposed to a user as illustrated in **FIG. 1**. Preferably, upper surface **205** is smooth, however, it may include protrusions or have a distinct texture to allow users to locate certain areas on active edge input device **120** by touch alone. The smoothness of upper surface **205** allows a user to drag their finger or other instrument along flexible strip **200** in a sweeping motion. This motion, for example, may be used to implement a scrolling function which allows a user to quickly view information on display **110**.

[0040] Lower surface **207** includes one or more protrusions **208** that extend outward and include extensions **209**. The face of protrusions **208** include upper electrical contacts **220** that are fixed thereon. Preferably, these electrical contacts made from a conductive carbon material and form a continuous ring around extensions **209** as illustrated in **FIG. 2a**. Upper electrical contacts **220** can be sectioned into distinct units, however, that are spaced around extensions **209**. The face of extensions **209** include lower electrical contacts **230** that are fixed thereon. These electrical contacts are "puck-shaped" and are preferably formed from a carbon material.

[0041] Body surface **260** includes body protrusion electrical contacts **240** and body extension electrical contacts

250 which are fixed thereon. Preferably, these electrical contacts are also composed of carbon and are aligned with upper electrical contact **220** and lower electrical contacts **230**, respectively. A gap exists between the electrical contacts on body surface **260** and the electrical contacts on flexible strip **200** while active edge input device **120** is at rest.

[0042] Cavities **210** are formed in an area of flexible strip **200** adjacent each protrusion **208**. Preferably, each of cavities **210** is formed in an image of protrusions **208** and extensions **209**, but may have any shape. Cavities **210** are designed to collapse when a pressure is applied and return to its original shape when the pressure is released. Thus, cavities **210** provide a "soft button" effect when engaged by a user. The deformation of cavities **210** under pressure is illustrated in **FIGS. 2b** and **2c**.

[0043] **FIG. 2b** illustrates a cross-sectional view of a first pressure applied to active edge input device **120** consistent with a first embodiment of the present invention. This figure shows the first step of the "two-step" functionality described herein. In this instance, a first pressure (e.g., a "touch") is applied to an area **270** of flexible strip **200** which deforms upper surface **205** and cavity **210**. The pressure forces protrusion **208** downward until lower electrical contact **230** makes contact with body extension electrical contact **250**. The connection of these two electrical contacts generates a signal that is sent to processor **130** for processing. A discussion of how processor **130** responds to this connection is described with respect to **FIGS. 4-6**. Pressure on one area of flexible strip **200** only affects the components directly below. That is, if pressure is applied to one of three adjacent areas on flexible strip **200**, only the selected area will respond to the pressure as shown in **FIG. 2b**.

[0044] **FIG. 2c** illustrates a cross-sectional view of a second pressure applied to a user input device consistent with a first embodiment of the present invention. This figure shows the second step of the "two-step" functionality described herein. In this instance, the first pressure shown on area **270** is increased to a second pressure (e.g., a "press") until upper electrical contact **220** makes contact with body protrusion electrical contact **240**. In this position, both lower electrical contact **230** and upper electrical contact **220** are electrically coupled with the respective body electrical contacts under area **270**. This connection generates a second signal to processor **130** which is processed accordingly.

[0045] **FIGS. 3a-3c** illustrate a cross-sectional view of a user input device consistent with a second embodiment of the present invention. In this second embodiment, active edge input device **120** includes an alternative design for entering data into a host device. Although the embodiment in **FIGS. 2a-2c** is preferred, the active edge input device illustrated in **FIGS. 3a-3c** also provides "two-step" functionality as described herein.

[0046] **FIG. 3a** illustrates a cross-sectional view of a second embodiment of active edge input device **120** at rest. As in the first embodiment, active edge input device **120** includes a flexible strip **300** positioned adjacent a host body surface **350**. Body surface **350** is a surface of a host device in which active edge user interface **100** is installed. For example, if active edge user interface **100** is installed in a wireless communication device, then body surface **350** is a surface of the wireless communication device.